



MARKED-UP VERSION OF THE AMENDMENTS

Claims 2-4 and 10 have been canceled.

Claims 1, 7 and 11 have been amended as follows:

1. (Amended) A process for the catalytic conversion of at least one reactant in a thermal chemical reaction, excluding deep oxidation, comprising:
 - passing at least one reactant into at least one reaction chamber;
 - said reaction chamber comprising a catalyst that catalyzes the reaction of said at least one reactant;
 - transferring heat to or from said at least one reaction chamber into at least one heat exchanger; and
 - obtaining at least one product from said reaction chamber;wherein said step of transferring heat, at steady state, transfers at least 0.6 W/cc of total reactor volume, where total reactor volume is defined as the sum of the volume of the reaction chamber(s) and heat exchanger chamber(s) including the volume of chamber walls;
 - wherein [the] a contact time of the reactant with the catalyst is less than about 0.3 seconds; and
 - wherein [the] a pressure drop through the reaction chamber is less than about 15 psig.
7. (Amended) A process for the catalytic conversion of at least one reactant in a thermal chemical reaction, excluding deep oxidation, comprising:
 - passing at least one reactant into at least one reaction chamber;
 - said reaction chamber comprising a porous catalyst that catalyzes the reaction of said at least one reactant;
 - transferring heat to or from said at least one reaction chamber from or into at least one heat exchanger; and
 - obtaining at least one product from said reaction chamber;wherein said porous catalyst comprises a metal support; and
 - wherein [the] a contact time of the reactant is less than about 0.3 seconds, thereby suppressing slow reactions and the formation of at least one undesirable chemical reaction product.
11. (Amended) A method for suppressing formation of at least one undesirable chemical reaction product in a thermal chemical reaction, comprising:
 - passing at least one reactant into at least one reaction chamber;
 - said reaction chamber comprising a porous catalyst that catalyzes the reaction of said at least one reactant;

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transferring heat to or from said at least one
reaction chamber from or into at least one heat exchanger; and
obtaining at least one product from said reaction chamber;
wherein said porous catalyst comprises a metal support; and
comprising at least one of the following process steps:
at steady-state, transferring at least 0.6 W of heat per cc of total reactor
volume, such that, at steady state, the catalyst is maintained within a temperature range
that reduces the formation of at least one undesirable chemical reaction product; or
maintaining [the] a contact time of the reactant at less than about 0.3
seconds, thereby suppressing slow reactions and reducing the formation of at least one
undesirable chemical reaction products.

New claims 13-46 have been added.